

Message

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Sent: 10/19/2017 11:07:16 PM
To: Barone, Stan [Barone.Stan@epa.gov]
CC: Beck, Nancy [beck.nancy@epa.gov]; Bertrand, Charlotte [Bertrand.Charlotte@epa.gov]; Wise, Louise [Wise.Louise@epa.gov]
Subject: RE: Systematic Review Community of Practice - Oct 2017 meeting summary/announcements

Stan

Thanks!

Michael

From: Barone, Stan
Sent: Thursday, October 19, 2017 10:48 AM
To: Dourson, Michael <dourson.michael@epa.gov>; Beck, Nancy <Beck.Nancy@epa.gov>; Bertrand, Charlotte <Bertrand.Charlotte@epa.gov>; Wise, Louise <Wise.Louise@epa.gov>
Subject: FW: Systematic Review Community of Practice - Oct 2017 meeting summary/announcements

Just to give some background on systematic review activities and coordination I provide the below as an FYI.

If you have any questions please let me know.

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Ex. 6 Personal Privacy (PP)

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Subject: Systematic Review Community of Practice - Oct 2017 meeting summary/announcements

SR Community – Below is the recap of our monthly meeting, held last week, and some additional announcements that may be of interest. Following from September’s meeting on the evaluation of study quality, October’s meeting was focused on automation of steps in the SR process. Summaries and links to the presentations are included below. Thanks to Alicia, Leonid, Ryan, and George for presenting!

Systematic Review Community of Practice | October Meeting Summary

Topic: Automation

- **Kristan Markey (OCSPP)** – Kristan provided an overview of terms/approaches that are widely used in automation of the SR process, including rules-based algorithms, machine learning algorithms, and natural language processing. In addition, some pitfalls to automation were described. See slides [here](#).
- **Alicia Frame (OLEM) – Automation Approaches in SR** (slides [here](#)). Alicia provided three examples of automation in SR.
 1. QC Prioritization of title/abstract screening: In this example, a training set of high and low priority reference as identified by manual review was uploaded in SWIFTRReview, enabling the software to assign priority scores to references from the lit search results. This allowed the reviewer to examine the references ranked as high priority and determine if any were missed by manual screening.
 2. QC broad search results: In this example, a narrow search was conducted to identify and mark important references as included and mark non-relevant references as excluded in SWIFTRReview. This parameterized model was then applied to results from a broader literature search to identify important references that were missed in the narrow search.
 3. Topic modeling: In this example, a broad search was uploaded in SWIFTRReview, which automatically builds topic models. Once topic models are created, they can be explored types of references within groups and groups and/or references can be selected or excluded for further screening.
- **Leonid Kopylev (NCEA) – Lesser known features of SWIFT** (slides [here](#)). Leonid described some retrospective analyses done on a lit search result (i.e., lit search results had been manually screened to identify important references) and demonstrated that SWIFT is good at identifying both ‘good’ and ‘bad’ references. For example, in one particular training set with 7 included and 7 excluded references, 30% of references with lowest ranking could be excluded and 95% of desired references would still be included. Leonid also described some considerations related to syntax in SWIFT, which is important to consider when creating search strings.

- **Ryan Jones (NCEA)** - Ryan discussed a lit search capability in HERO that allows a user to generate a “seed” or list of important references to be used in citation mapping, which automates human judgment and ranks references based on likelihood of relevance. This can be combined with results from traditional key word searches; the overlap between search methods results in 60% relevance. In addition, topic classification can be done with large lit search results to categorize studies as epidemiology, toxicology, ecology, or exposure.
- **George Woodall (NCEA)** – provided brief overview of pilot program to develop an agency-wide strategy for managing and communicating environmental health science information (slides [here](#)). Objective is to develop harmonized, integrated, and interoperable taxonomies and ontologies for specific knowledge domains. Some examples were provided.

Announcements & Activities

- Join the **Sharepoint** site! This is critical to managing our membership and communications starting in the Fall.
- **International Collaboration for the Automation of System Reviews (ICASR)** – meeting in London, October 17-18
- **Joint EFSA/EBTC scientific colloquium on evidence integration in risk assessment: the science of combining apples and oranges** – meeting in Lisbon, October 25-26
- **BioCreAtivE VI Challenge and Workshop** – Bethesda, MD, October 18-20. The Critical Assessment of Information Extraction systems in Biology challenge evaluation consists of a community-wide effort for evaluating text mining and information extraction systems applied to the biological domain.
- Please let us know if you have any ideas, question, concerns, etc!

Next Meeting: November 14, 2017
Topic: TBD

-Jennifer Nichols, Emma Lavoie, Kristan Markey, Xabier Arzuaga, Emmi Felker-Quinn

Jennifer L. Nichols, Ph.D.

Toxicologist

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